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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,790	03/12/2004	Kenneth L. Smith	34121US (KDK)	8337

7590 04/19/2007  
Richmond, Hitchcock, Fish & Dollar  
PO Box 2443  
Bartlesville, OK 74005

EXAMINER
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BOMAR, THOMAS S

ART UNIT	PAPER NUMBER
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3672

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/799,790

Applicant(s)

SMITH ET AL.

Examiner

Shane Bomar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7,9-13 and 15-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-13 and 15-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. The indicated allowability of claims 9 and 22-27 is withdrawn in view of the newly discovered reference(s) to Trzeciak. Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1-6, 9-13, 16-19, 21, 28-31, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,232,751 to Trzeciak in view of US 6,817,633 to Brill et al.

Regarding claims 1, 21, and 39, Trzeciak teaches a drilling shoe 19 configured to be coupled to a section of drill pipe P and the associated method for using said shoe, said drilling shoe comprising: a fixed section 23 adapted to be coupled to the section of drill pipe; and a rotatable section 45 coupled to the fixed section, said drilling shoe being shiftable between a rotatable configuration (Fig. 5) and a locked configuration (Fig. 6), said rotatable section being

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rotatable relative to the fixed section when the drilling shoe is in the rotatable configuration, said rotatable section being rotationally fixed relative to the fixed section when the drilling shoe is in the locked configuration (col. 5, line 55 through col. 6, line 19), said drilling shoe comprising an internal biasing mechanism 158 for biasing the drilling shoe towards the rotatable configuration (Fig. 5; col. 6, lines 29-48). However, it is not explicitly taught that the section of drill pipe P is a section of casing.

Brill et al teach that drill pipe, such as the pipe taught by Trzeciak, can advantageously be replaced by casing (col. 2, lines 9-32). It would have been obvious to one of ordinary skill in the art, having the teachings of Trzeciak and Brill et al before him at the time the invention was made, to replace the drill pipe taught by Trzeciak to include the casing of Brill et al, in order to obtain the ability to reduce the number of times pipe must be removed and inserted in the wellbore, as taught by Brill et al. One would have been motivated to make such a combination because the use of casing in place of drill pipe will reduce drilling and completion costs, as also taught by Brill et al.

Regarding claims 2, 3, and 28, the combination applied to claims 1 and 21 above teaches that said drilling shoe is shiftable from the rotatable configuration into the locked configuration by axially shifting the rotatable and fixed sections relative to one another, and that said fixed and rotatable sections are telescopically intercoupled (compare Figs. 5 and 6 of Trzeciak).

Regarding claims 4, 5, 29, and 30, the combination applied to claims 1 and 21 above teaches that said fixed section 23 has first and second fixed ends, said rotatable section 45 has first and second rotatable ends, said first fixed end being configured to be coupled to the casing section through intermediate connections (Fig. 1 of Trzeciak), said second fixed end and said

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first rotatable end being coupled to one another, wherein one of said second fixed end and said first rotatable end presenting a projection 48 or 51, the other of said second fixed end and said first rotatable end presenting a recess 49 or 52, said projection being received in said recess when the drilling shoe is in the locked configuration to thereby prevent relative rotation of the fixed and rotatable sections, said projection being removed from the recess when the drilling shoe is in the rotatable configuration to thereby permit relative rotation of the fixed and rotatable sections (Figs. 5-6; col. 4, lines 31-60 of Trzeciak).

Regarding claim 6, the combination applied to claim 4 above teaches that said rotatable section 45 includes a drillable drill bit B rigidly coupled to the second rotatable end, wherein it is known that any bit is capable of being drilled (Fig. 6).

Regarding claim 9, the combination applied to claim 1 above teaches that said internal biasing mechanism 158 comprises a compression spring disposed between at least a portion of the fixed section and at least a portion of the rotatable section (Figs. 5 and 6 of Trzeciak).

Regarding claim 10, the combination applied to claim 1 above teaches that said rotatable section 45 includes an internal drive member defining a splined opening 44 (col. 4, lines 18-30 of Trzeciak).

Regarding claim 11, the combination applied to claim 1 above teaches that said fixed section 23 is threadably coupled to section 14, which is then coupled to the casing section P (Figs. 1 and 2a of Trzeciak).

Regarding claim 12, the combination applied to claim 1 above teaches many of the same limitations as in claim 12, with Brill et al providing the teaching and motivation for replacing Trzeciak's drill pipe with casing, wherein it is further taught that interlockable teeth 48 and 51

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are biased apart during rotation of the rotatable section 45 relative to the casing P (Figs. 5 and 6 of Trzeciak). It is also noted that, as previously stated in regards to claim 6, any bit is capable of being drilled out, although the claim simply states that the bit *can be* drilled out, which does not mean that the bit is, or has to be, drilled out.

Regarding claim 13, the combination applied to claim 12 above teaches that said shoe 19 is undetachable from the casing while the casing and the shoe are positioned down hole due to, at least in part, the threads 29 (Fig. 2a of Trzeciak).

Regarding claim 16, the combination applied to claim 12 above teaches that said locking mechanism further includes a spring 158 biasing the teeth apart during rotation of the rotatable section 45 relative to the casing P (Fig. 5 of Trzeciak).

Regarding claims 17 and 18, the combination applied to claim 12 above teaches that said shoe includes a drive section 43/44 for powered rotation of the rotatable section relative to the casing, wherein said drive section comprising a plurality of splines 44 and a complementary drive shaft 37 configured for releasable engagement with the splines (Figs. 5 and 6; col. 4, lines 18-30 of Trzeciak).

Regarding claim 19, the combination applied to claim 18 above teaches that said apparatus further includes a mud motor M for powering the drive shaft (Fig. 1 of Trzeciak).

Regarding claim 31, the combination applied to claim 21 above teaches that while the rotatable portion of the drilling shoe is rotating relative to the casing section, the casing P can simultaneously rotate since it is coupled to a rotary table at the surface and nothing prevents it from rotating while the rotatable section is rotating (Fig. 1 and col. 6, lines 8-12 of Trzeciak).

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5. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trzeciak in view of Brill et al as applied to claims 6 and 12 above, and further in view of US 2004/0226751 to McKay et al.

The aforementioned combination teaches the drill bit of claims 6 and 12, but does not explicitly teach that there is a valve(s) in the bit for controlling flow therethrough.

McKay et al teach a drilling shoe similar to that of the combination. It is further taught that a spring 360 can be added into the mud bore 46 to act as a valve for controlling fluid flow, and any number of said valves can be contemplated by one of ordinary skill in the art (see Figs. 2, 3, 9, and 10 of McKay et al). It would have been obvious to one of ordinary skill in the art, having the teachings of the combination and McKay et al before him at the time the invention was made, to modify the bit taught by the combination to include the valve(s) of McKay et al, in order to obtain a bit that will allow the re-establishment of circulation therethrough after a cementing operation (see paragraphs 0043-0046 of McKay et al). One would have been motivated to make such a combination because the valve will prevent cement or other fluids from re-entering the casing, wherein cement re-entering the casing could prove detrimental to the operation.

6. Claims 15, 22-27, 32-36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trzeciak in view of Brill et al as applied to claim 12 (in the case of claim 15) above, and as analogously applied to claim 21 above, and further in view of US 6,896,075 to Haugen et al.

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Regarding claims 15, 22, 23, and 32, the combination applied to claims 1, 12, and 21 above teaches the same limitations as those in claims 22 and 32, with the exception of the act of drilling out of the drilling shoe or bit.

Haugen et al teach a method and apparatus for drilling with casing similar to that of the aforementioned combination, wherein a mud motor rotates the bit downhole. It is further taught that the drill bit below the motor is drillable (col. 2, lines 41-43). It would have been obvious to one of ordinary skill in the art, having the teachings of the combination and Haugen et al before him at the time the invention was made, to modify the drill bit taught by the combination to include the drillability of Haugen et al. One would have been motivated to make this combination because the connections between sections of casing are not usually strong enough to handle the forces needed for rotary drilling from the surface, yet the casing must be left downhole (col. 2, lines 35-54 of Haugen et al).

Regarding claim 24, and with further respect to claim 32, the combination also teaches that the casing is cemented in place (col. 2, lines 22-24 of Brill et al).

Regarding claims 25-27, the combination applied to claim 24 above teaches that neither the casing nor drilling shoe is removed from the hole since the casing is cemented in place, wherein the drilling out of the bit will allow fluids to be produced through the drilling shoe to the casing P (Fig. 1 of Trzeciak).

Regarding claims 33-36, the combination applied to claim 32 above teaches that said fixed section is telescopically intercoupled with said rotatable section, said fixed and rotatable sections being axially shiftable relative to one another; said locking mechanism comprising two sets of interlockable teeth 48 and 51, one of said sets attached to the fixed section and the other



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of said sets attached to the rotatable section; and said locking mechanism further including a spring biasing 158 the teeth apart (Figs. 5 and 6 of Trzeciak).

Regarding claim 38, the combination applied to claim 32 above teaches that while the rotatable portion of the drilling shoe is rotating relative to the casing section, the casing P can simultaneously rotate since it is coupled to a rotary table at the surface and nothing prevents it from rotating while the rotatable section is rotating (Fig. 1 and col. 6, lines 8-12 of Trzeciak).

7. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trzeciak in view of Brill et al and Haugen et al as applied to claim 32 above, and further in view of McKay et al.

The combination applied to claim 32 above lacks the teaching of valves in the bit, just as this limitation was noted as missing in regards to claims 7 and 20 above. Therefore, McKay et al can analogously be applied to these references to supply the missing limitation for the same reasons and motivation.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1, 12, 18, 21, and 32 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:00am to 2:30pm. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David J. Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

tsb  
April 16, 2007